



## GEO-FOUNDATIONS Contractors Inc.

### Britt Wharf

Date: 2004  
Technology: Percussive Duplex Drilling

The wharf at Britt Harbour, located at the mouth of the Magnetawan River on Georgian Bay, receives tanker ships from the Great Lakes to supply CP Rail's Britt fueling bunkers.

The existing wooden wharf, destroyed by fire in 2003, was replaced in the summer of 2004 by McNally Construction of Hamilton. The new wharf is founded on 37 rock-socketed, 406mm diameter pipe piles, installed by McNally and Geo-Foundations.

The very loose character of the river sediments, combined with the high strength and steeply sloping profile of the Canadian Shield bedrock at Britt precluded the use of driven piles. The contract specifications called for each pile to be bored a minimum of 800 mm into sound rock, with an additional 5 metre deep, 127mm diameter rock socket drilled below the tip of the pile for the purpose of constructing an 800 kN rock anchor.

All of the piling was marine based, completed using a shoe-drive concentric duplex drilling system with down-hole hammer and rotator motor on swinging leads suspended from a barge-mounted crane. The majority of the rock anchor drilling was staged from the deck falsework supported on the pipe piles. Every rock anchor was proof tensioned to 1034 kN prior to concreting the piles.



*A 406Ø pipe pile, complete with drill rods and downhole hammer inside, being hoisted by land-based crane prior to positioning within barge-base swinging leads*



*Pile installation in progress using swinging leads supported by a barge-based crane*



*Concentric, shoe-drive, 415Ø, floating crown under-reamer*